What is claimed is:

1. A shower head structure for use in a device for processing a semiconductor while a processing gas being provided into a processing space accommodating a heated substrate to be processed, comprising:

a shower head including a plurality of gas injection holes for providing the processing gas; and

at least one light introducing rod of a radiation thermometer inserted through at least one of the gas injection holes.

2. The structure of claim 1, wherein the shower head includes a gas injection surface where the gas injection holes are provided and the light introducing rod is inserted through a gas injection hole located at a substantially central part of the gas injection surface.

3. The structure of claim 1, wherein the shower head includes a gas injection surface where the gas injection holes are provided and said at least one light introducing rod is inserted through a number of gas injection holes, respectively, which are arranged along a radial direction of the gas injection surface and at least one of which is located at a substantially central part of the gas injection surface.

4. The structure of claim 1, wherein a gas is discharged from a lower end opening of said one of the gas injection holes to be diffused while the gas is falling toward outside of a susceptor in the processing space; and said at least one of the gas injection holes is spaced apart from a center of the shower head such that a position of a main gas stream of the gas discharged from said at least one of the gas injection holes falls outside an outer circumference of the substrate on the susceptor when the gas stream reaches an identical horizontal level to that of an upper surface of the susceptor.

5. The structure of claim 1, wherein an opening area of a gas injection hole through which the light introducing rod is inserted is larger than an opening area of another gas injection hole by a cross sectional area of the light introducing rod, an identical gas being injected through the gas injection hole and said another gas injection hole.

6. The structure of claim 1, further comprising an elevator for moving the light introducing rod up and down, wherein the elevator selectively retreats the light introducing rod from said at least one of the gas injection holes through which the light introducing rod is inserted.

7. The structure of claim 6, further comprising a separation mechanism for selectively closing said at least one of the gas injection holes through which the light introducing rod is inserted.

8. The structure of claim 1, wherein, in addition to the gas injection holes for providing an assist gas as the processing gas, the shower head further includes plural gas injection holes for providing a source gas and the shower head is configured such that the assist gas and the source gas are prevented from being mixed with each other therein.

9. The structure of claim 1, wherein an inert gas is introduced to said at least one of gas injection holes through which the light introducing rod of the radiation thermometer is inserted.

10. A semiconductor processing device for processing a semiconductor while a processing gas being provided into a processing space accommodating a heated substrate to be processed, comprising:

a processing chamber forming the processing space and capable of being pumped in vacuum;

a susceptor for mounting the substrate in the processing chamber;

a heater for heating the substrate on the susceptor;

a shower head provided with a plurality of gas injection holes for supplying the processing gas;

at least one light introducing rod of a radiation thermometer inserted through at least one of the gas injection holes; and

a temperature controller for controlling the heater based on a detected value of the radiation thermometer.

11. The device of claim 10, further comprising a support member having a ring shape, wherein the support member has a low thermal conductivity, blocks heat rays emitted from the heater and supports the susceptor by contacting a peripheral part thereof.

12. The device of claim 10, further comprising an isolation ring, installed on an upper side of a peripheral part of the susceptor for blocking heat rays.

13. The device of claim 10, wherein a gas is discharged from a lower end opening of said one of the gas injection holes to be diffused while the gas is falling toward outside of the susceptor in the processing space; and said at least one of the gas injection holes is spaced apart from a center of the shower head such that a position of a main gas stream of the gas discharged from said at least one of the gas injection holes falls outside an outer circumference of the

substrate on the susceptor when the gas stream reaches an identical horizontal level to that of an upper surface of the susceptor.

14. The device of claim 10, wherein an inert gas is introduced to said at least one of gas injection holes through which the light introducing rod of the radiation thermometer is inserted.

15. The device of claim 10, further comprising a temperature measuring device installed at the susceptor; and a temperature compensator for correcting a setting temperature value of the susceptor for the temperature controller based on a detection value of the radiation thermometer and a target temperature value of the substrate, when the detection value and the target temperature value are obtained by performing dummy process by way of using a dummy substrate for correcting temperature.

16. The device of claim 15, wherein the temperature measuring device is a thermocouple.

17. A semiconductor processing device for processing a semiconductor while providing a processing gas into a processing space accommodating a heated substrate to be processed, comprising:

a processing chamber forming the processing space and capable of being pumped in vacuum;

a susceptor for mounting the substrate in the processing chamber;

a heater including a heating lamp, installed below the susceptor, for heating the substrate on the susceptor;

a support member having a ring shape for supporting the susceptor by contacting a peripheral part thereof, wherein the support member is colored for blocking heat rays emitted from the heating lamp;

a shower head, installed at a ceiling of the processing chamber, for supplying the processing gas;

a radiation thermometer attached to an upper part of the shower head; and

a temperature controller for controlling the heater based on a detected value of the radiation thermometer.

18. The device of claim 17, wherein the support member is substantially made of a material selected from the group consisting of black ceramics of quartz containing black metal oxide such as niobium oxide, quartz containing black SiC, quartz containing carbon, black AlN containing carbon, etc.

19. The device of claim 17, further comprising an isolation ring, installed at an upper side on the peripheral

part of the susceptor, for blocking heat rays, wherein the isolation ring is substantially made of a material selected from the group consisting of black ceramics of quartz containing black metal oxide such as niobium oxide, quartz containing black SiC, quartz containing carbon, black AlN containing carbon, etc.

20. The device of claim 17, wherein the radiation thermometer is installed at the shower head and faces toward a hole for discharging a gas, and wherein the gas is discharged from a lower end opening of the hole to be diffused while the gas is falling toward outside of the susceptor; and the hole is spaced apart from a center of the shower head such that a position of a main gas stream of the gas discharged therefrom falls outside an outer circumference of the substrate on the susceptor when the gas stream reaches an identical horizontal level to that of an upper surface of the susceptor.

21. A semiconductor processing device for processing a semiconductor while providing a processing gas into a processing space accommodating a heated substrate to be processed, comprising:

a processing chamber forming the processing space and capable of being pumped in vacuum;

a susceptor for mounting the substrate in the

processing chamber;

a heater for heating the substrate on the susceptor;

a shower head, installed at a ceiling of the processing chamber, for providing the processing gas;

a heat ray draining passage vertically formed through the shower head;

a radiation thermometer facing through a measurement window at an upper opening part of the heat ray draining passage; and

an inert gas introducing passage for introducing an inert gas into the heat ray draining passage.

22. The device of claim 21, wherein the inert gas is discharged from a lower end opening of the heat ray introducing passage to be diffused while the gas is falling toward outside of the susceptor; and the heat ray introducing passage is spaced apart from a center of the shower head such that a position of a main gas stream of the inert gas discharged thereform falls outside an outer circumference of the substrate on the susceptor when the gas stream reaches an identical horizontal level to that of an upper surface of the susceptor.

23. The device of claim 21, wherein a distance between a center of the shower head and a center of the lower end opening of the heat ray introducing passage is set to range

from 70% to 100% of a radius of the substrate.

24. The device of claim 21, wherein a distance between a lower surface of the shower head and an upper surface of the susceptor is in a range from 20 mm to 30 mm, and a flow rate of the inert gas is in a range from 3 sccm to 100 sccm.

25. The device of claim 21, further comprising a support member having a ring shape, wherein the support member has a low thermal conductivity, blocks heat rays emitted from the heater and supports the susceptor by contacting a peripheral part thereof.

26. The device of claim 21, further comprising an isolation ring, installed on an upper side of a peripheral part of the susceptor, for blocking heat rays.

27. The device of claim 21, wherein the processing gas is introduced to the inert gas introducing passage.

28. The device of claim 21, wherein the radiation thermometer includes a light introducing rod.

29. A method for performing semiconductor processing while providing a processing gas into a processing space accommodating a heated substrate to be processed, comprising

the steps of:

heating, by using a heater, the substrate in a processing chamber of forming the processing space and capable of being pumped in vacuum;

performing the semiconductor processing by providing the processing gas from a plurality of gas injection holes of a shower head toward the substrate heated by the heater; and

while performing the semiconductor processing, controlling the heater based on a detected value of a radiation thermometer having at least one light introducing rod inserted through at least one of the gas injection holes.

30. A method for performing semiconductor processing while providing a processing gas into a processing space accommodating a heated substrate to be processed, comprising the steps of:

heating, by using a heater, the substrate on a susceptor installed in a processing chamber forming the processing space and capable of being pumped in vacuum;

performing the semiconductor processing by providing the processing gas from a plurality of gas injection holes of a shower head toward the substrate heated by the heater;

while performing the semiconductor processing, controlling the heater based on a detected value of a temperature measuring device installed at the susceptor;

executing dummy processing by heating a dummy substrate for temperature correction placed on the susceptor by the heater;

while, performing the dummy processing, monitoring the temperature of the dummy substrate by using a radiation thermometer having at least one light introducing rod inserted through at least one of the gas injection holes; and

correcting a setting temperature of the susceptor based on a detected value of the radiation thermometer and a target temperature value of the substrate.

31. The method of claim 30, further comprising the step of cleaning an inside of the processing chamber after performing the semiconductor processing with respect to a number of substrates to be processed.

32. The method of claim 31, further comprising, after the cleaning step, the step of supplying the processing gas without loading a substrate to be processed in the processing chamber and forming a pre-coat thin film of the processing gas on an inner surface of the processing chamber.

33. The method of claim 30, wherein during the cleaning step, the light introducing rod is retreated from said at least one of the gas injection holes through which the light

introducing rod is inserted by using an elevator.